USER MANUAL

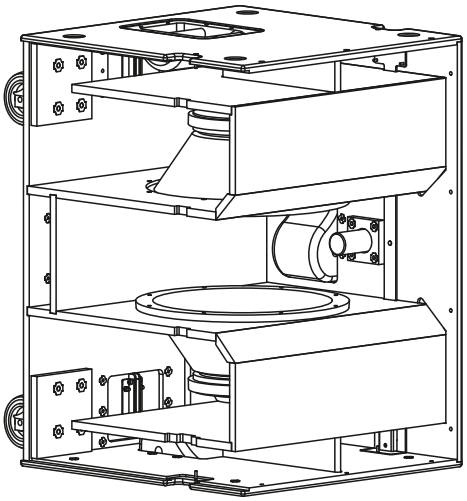
SW215FP

passive subwoofer

KEY FEATURES

- Very High Output
- Compact size for a very good output-to-weight ratio
- Manifolded Transmission Line configuration for very fast transient response
- Flying vertical arrayable version

INTRODUCTION



The SW215FP subwoofer is designed to deliver high quality low frequency reproduction where very high output is a key requirement, together with well defined deep bass response and fast transient response. Its compact size and light weight make it suitable for several different uses, ranging from touring applications to fixed installations and high-level dance clubs.

The SW215FP is a very high quality powered subwoofer system featuring some of the most advanced technologies for low frequency reproduction. Its unique and innovative design is based on a configuration that can be defined as Manifolded Transmission Line.

It uses manifolding of the front side of the cones to maximize the mutual coupling between the two drivers, while loading the back of the cone with a large-size transmission line that has the function to create a transmission path from the back of the transducers to the front.

The SW215FP subwoofer system is equipped with two high power 15" (380mm) transducers capable of long excursion (up to 33mm peak-to-peak), controlled by high stiffness Double Silicon Spider as centering suspension and by heavy duty surround. The motor structure features high strength (BL^2/Re) with optimized symmetry and excursion controlled by Aluminium Demodulating Ring. The robust copper 75mm (3") voice coil is wounded in two different layers both outside and inside the coil support, then doubling the coil surface exposed to air cooling and consequently improving the long term thermal capacity of the loudspeaker. Cones are made of very high-stiffness reinforced paper, featuring also invisible water repellent treatment.

TECHNICAL SPECIFICATION

Acoustical	
System type	Manifolded Band Pass
Transducer	Two 15" (380 mm), 3" (75 mm) VC, High stiffness water repellent reinforced cone, Flux Demodulating Ring VC, Double Centering Spider Suspension
Frequency response (±3 dB)	39 Hz – 120 Hz (Processed)
Frequency range (±10 dB)	35 Hz – 300 Hz (Unprocessed)
Sensitivity (1.41V @ 1m, 2Pi)	102dB (averaged from 40 to 100Hz)
Maximum Peak SPL @ 1m	139 dB
Electrical	
Nominal Impedance	8 Ω + 8 Ω
Minimum Impedance	6.1 Ω + 6.1 Ω @ 41Hz
Power Handling Continuous*	700 W + 700 W
Power Handling Program	900 W + 900 W
Power Handling Peak	2100 W + 2100 W
Power Compression	@ -10 dB Power (180 W + 180 W) = 0.8 dB @ -3 dB Power (900 W + 900 W) = 1.5 dB @ 0 dB Power (1800 W + 1800 W) = 2.7 dB

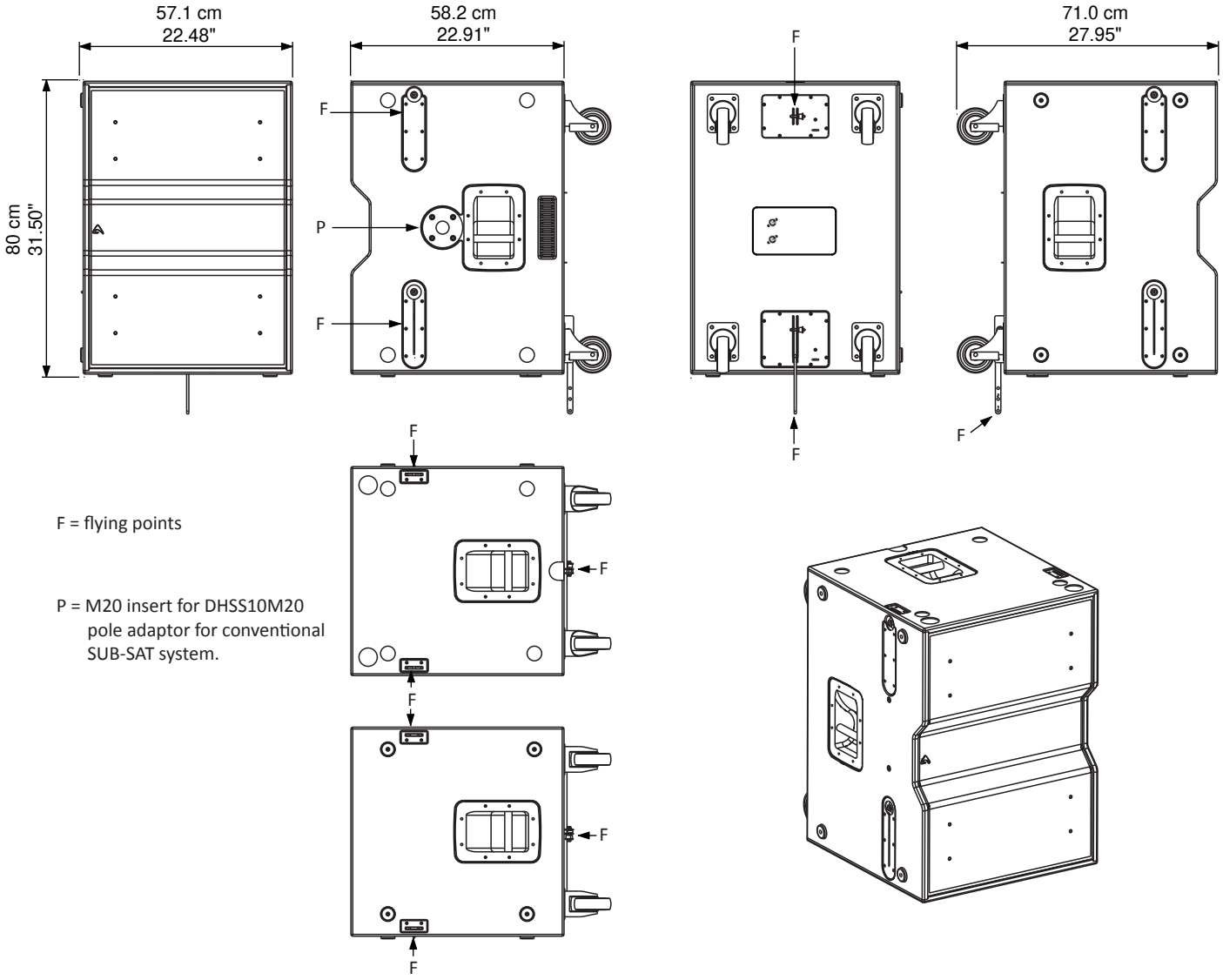
Connectors	
Connector Type	Neutrik® Speakon® NL4 x 2
Input Wiring	LF1 = Pin 1+/-; LF2 = Pin 2+/-)
Mechanical	
Width	571 mm (22.48")
Height	800 mm (31.50")
Depth	582 mm (22.91")
Depth Including Wheels	710 mm (27.95")
Construction	15 mm, reinforced Phenolic Birch
Paint	High resistance, water based paint
Wheels	4 heavy-load 100 mm ø
Transport	4 handles
Side Suspension	High Strength Steel with ¼ Fast Pin
Back Suspension	High Strength Steel with ¼ Fast Pin
Net Weight	65 Kg (143.3 lb)

** AES Pink Noise Power*

revision 2014-12-5

AXIOM

MECHANICAL DRAWING



OPTIONAL ACCESSORIES

NL4FX	Neutrik Speakon® PLUG
PC260	2 in 6 out digital loudspeaker processor
USB2CAN	PRONET network converter
RAINCOV215	Rain cover for input sockets
DHSS10M20	Sub-Speaker ø35mm Pole with M20 screw
KPTSW215	Fly bar for Axiom AX2065 and SW215 Loudspeakers
AXFEETKIT	Kit made of 6pcs BOARDACF01 foot

*see **http://www.axiomproaudio.com/** for detailed description and other available accessories.*

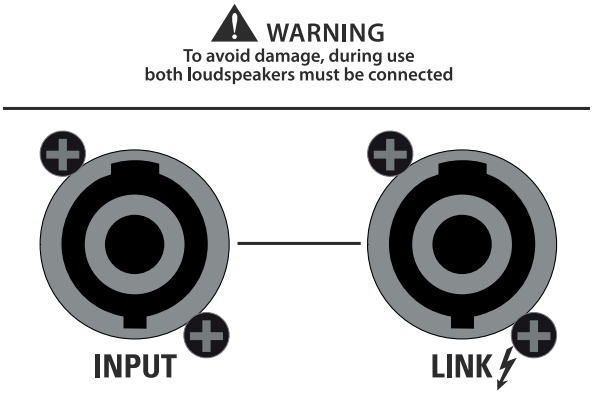
SPARE PARTS

AC103GS	100 mm Swivel castor without brake
AC115DN	Black steel handle
98AXM215SW8	15'' woofer - 3" VC - 8 ohm
NL4MP	Neutrik Speakon® panel socket
94SPI2265	Locking Pin for AX2265

REAR PANEL

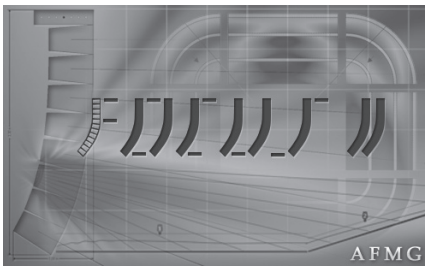
INPUT - Power input for the external amplifier. The SW215P does not include a passive crossover for filtering the signal. The connections are the following:

INPUT - LINK	
NL4 pin number	**internal connection**
1+	**LF1+**
1-	**LF1-**
2+	**LF2+**
2-	**LF2-**



LINK - Power output in parallel with the INPUT socket for connecting the unit to another speaker. The number of SW215P cabinets that can be connected in parallel depends on the amplifier load capacity.

PREDICTION: EASE Focus 2



To aim correctly a complete system we suggests to use always the Aiming Software - EASE Focus 2:
The EASE Focus 2 Aiming Software is a 3D Acoustic Modelling Software that serves for the configuration and modelling of Line Arrays and conventional speakers close to reality. It only considers the direct field, created by the complex addition of the sound contributions of the individual loudspeakers or array components.
The design of EASE Focus is targeted at the end user. It allows the easy and quick prediction of the array performance in a given venue. The scientific base of EASE Focus stems from EASE, the professional electro- and room acoustic simulation software developed by AFMG Technologies GmbH. It is based on the EASE GLL loudspeaker data file required for its use: **AXIOM_AX Series_v2_1.GLL**, please note that the version must be 2.0 or more. The GLL file contains the data that defines the Line Array with regard to its possible configurations as well as to its geometrical and acoustical properties.

Download the EASE Focus 2 app from the AXIOM website at http://www.axiomproaudio.com/ clicking on downloads section of the product.

Use the menu option **Edit / Import System Definition File** to import the file **AXIOM_AX Series_v2_1.gll** from the installation Data folder, the detailed instructions to use the program are located in the menu option **Help / User's Guide**.
*Note: Some windows system can require the **.NET Framework 4** that can be download from microsoft website at http://www.microsoft.com/en-us/download/default.aspx.*

WARNING! CAREFULLY READ THE FOLLOWING INSTRUCTIONS AND CONDITION OF USE:
- This loudspeaker is designed exclusively for Professional audio applications. The product must be installed by qualified personal only.
- Proel strongly recommends that this loudspeaker cabinet be suspended taking into consideration all current National, Federal, State and Local regulations. Please contact the manufacturer for further information.
- Proel do not accept any liability for damage caused to third parties due to improper installation, lack of maintenance, tampering or improper use of this product, including disregard of acceptable and applicable safety standards.
- During assembly pay attention to the possible risk of crushing. Wear suitable protective clothing. Observe all instructions given on the rigging components and the loudspeaker cabinets. When chain hoists are in operation ensure that there is nobody directly underneath or in the vicinity of the load. Do not under any circumstances climb on the array.

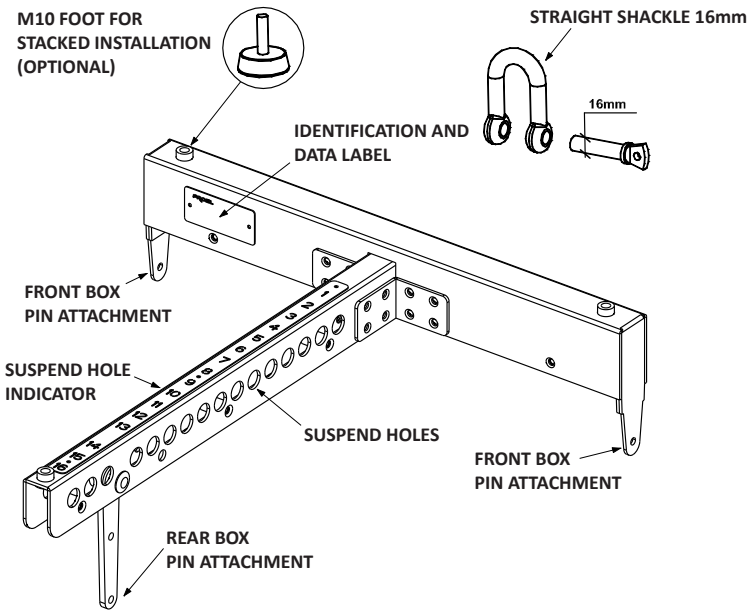
AIMING and SUSPENDING INSTRUCTIONS (FLOWN SET UP)

Suspending the sub-woofers has different advantages and some inconvenient. One inconvenient is that as the sub-woofers don't couple with the ground and indoor usage can have different behaviours depending on ceiling and walls. The advantages are that the space underneath the stage can be free from subs, the coupling between sub and sat is better and, using a column of 4-6 sub boxes, the basses can be steered more deeply into the audience with a more uniform distribution of the low frequencies.
The SW215FP subwoofers can be suspended alone or at the top of a vertical array of AX2065P loudspeakers using the KPTSW215 fly bar. The boxes are linked together in a column using a series of couplers integrated in the frame of each enclosure. Each system can be set properly both acoustically and mechanically, using the aiming software.
Coupling the system in the front does not require any adjustment: using two locking pins, each loudspeaker box is fixed to the previous. The slotted bar in the back is inserted in a U-shaped frame that features a series of numbered holes. Sliding the slotted bar in the U-shaped frame of the next loudspeaker and inserting a locking pin in one of the numbered holes, it is possible to adjust the relative splay angle between two adjacent loudspeakers in the array column.

KPTSW215 fly bar maximum capacity is 540 Kg (1190 lbs) with the 0° angle. It can support, with a safety factor of 10:1, up to:

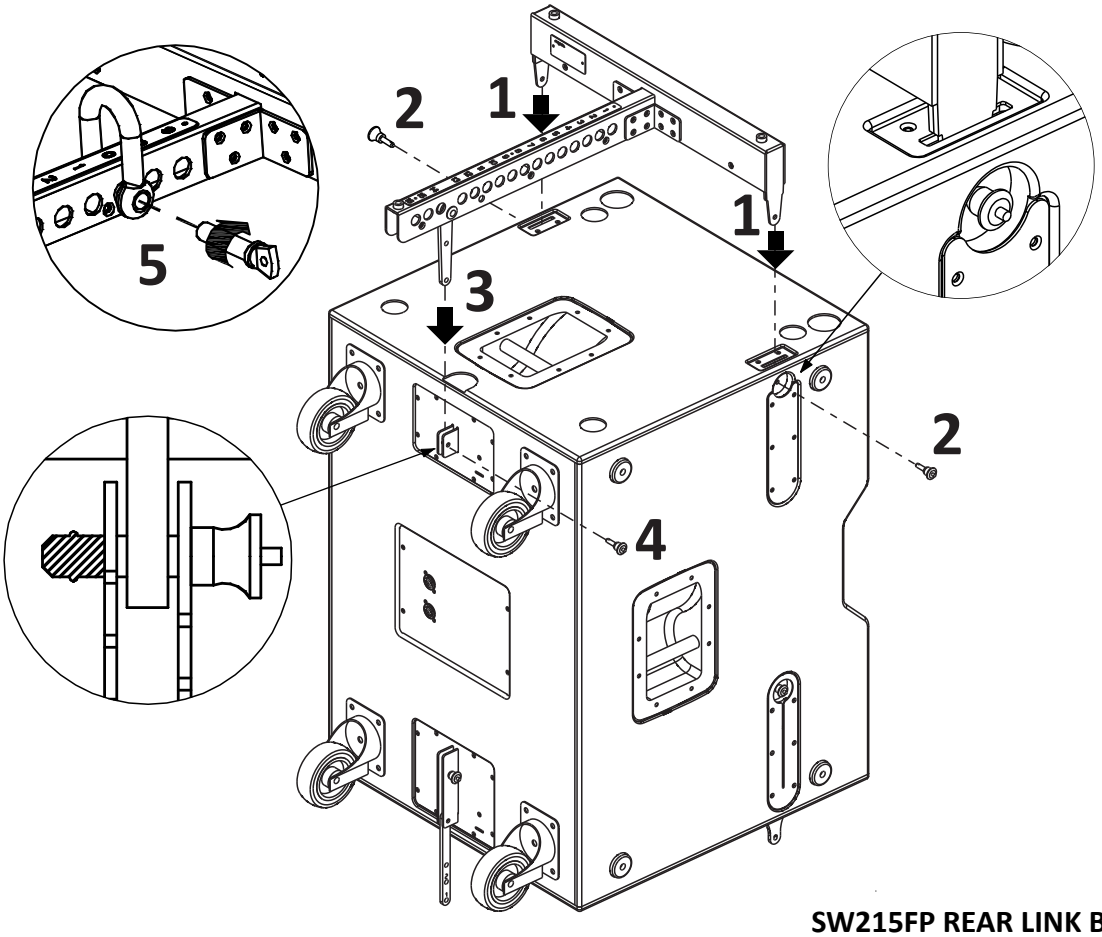
- **12 AX2065P (flybar from 0 to 10°)**
- **2 SW215FP + 8 AX2065P (flybar at 0°)**
- **6 SW215FP (flybar from 0° to 5°)**

KPTSW215 FLY BAR AND ACCESSORIES



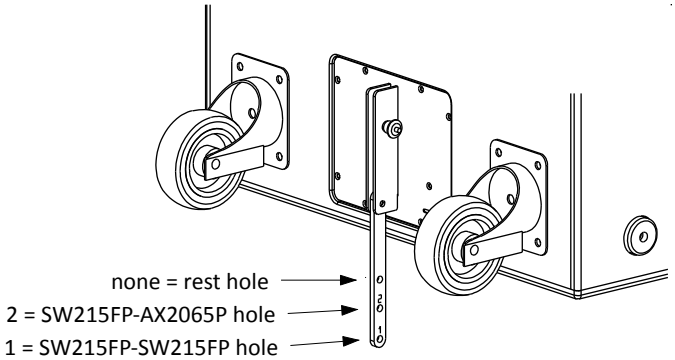
Follow the sequence in the figure for fixing the fly bar at the first box. Usually this is the first step before lifting up the system. Be careful to insert properly all the locking pins (1)(2) and (3)(4) then the shackle (5) in the right holes as specified by the aiming software.

KPTSW215 FLY BAR ASSEMBLY SEQUENCE



When lifting the system always proceed gradually step by step, paying attention to secure the fly bar to the box (and the box to the other boxes) before pulling up the system: this makes easier to insert properly the locking pins. Also when the system is released down, unlock gradually the pins.
During the lifting be very careful to not let the cables enter the space between one enclosure and the other, as their compression could cut them.
Please note that the Rear Link Bar of the SW215FP cabinet has two holes (see figure):
The hole signed as **nr.1** must be used for **SW215FP-SW215FP** sub-sub link.
The hole signed as **nr.2** must be used for **SW215FP-AX2065P** sub-sat link.

SW215FP REAR LINK BAR

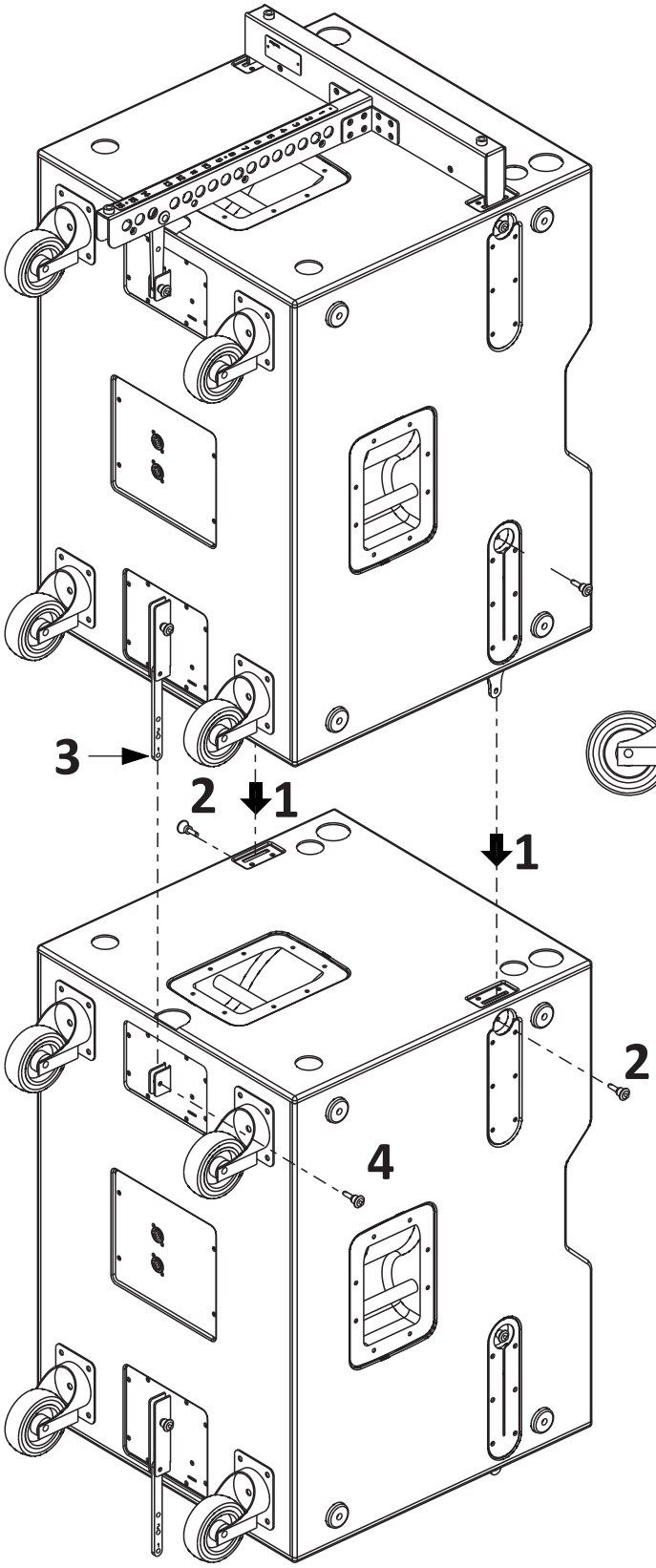


Wind loads

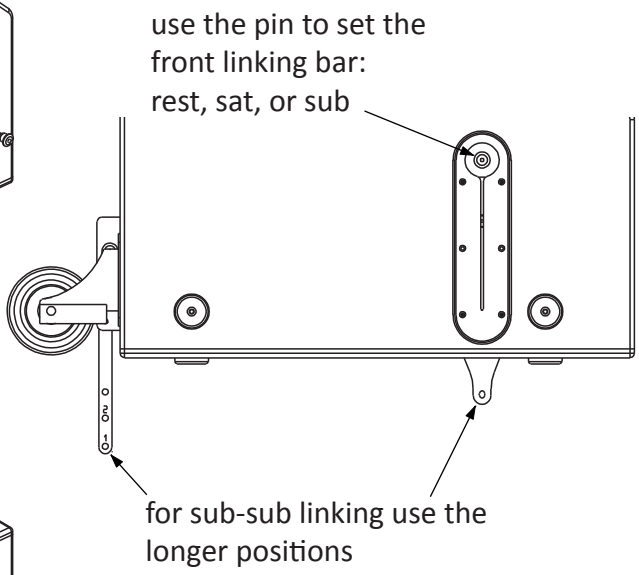
When planning an open-air event it is essential to obtain current weather and wind information. When loudspeaker arrays are flown in an open-air environment, possible wind effects must be taken into account. Wind load produces additional dynamic forces acting on the rigging components and the suspension, which may lead to a dangerous situation. If according to the forecast wind forces higher than 5 bft (29-38 Km/h) are possible, the following actions have to be taken:
- The actual on-site wind speed has to be monitored permanently. Be aware that wind speed typically increases with height above ground.
- Suspension and securing points of the array should be designed to support double the static load in order to withstand any additional dynamic forces.

WARNING!
Flying loudspeakers overhead at wind forces higher than 6 bft (39-49 Km/h) is not recommended.
If the wind force exceeds 7 bft (50-61 Km/h) there is a risk of mechanical damage to the components which may lead to a dangerous situation for persons in the vicinity of the flown array.
- Stop the event and make sure that no person remains in the vicinity of the array.
- Lower and secure the array.

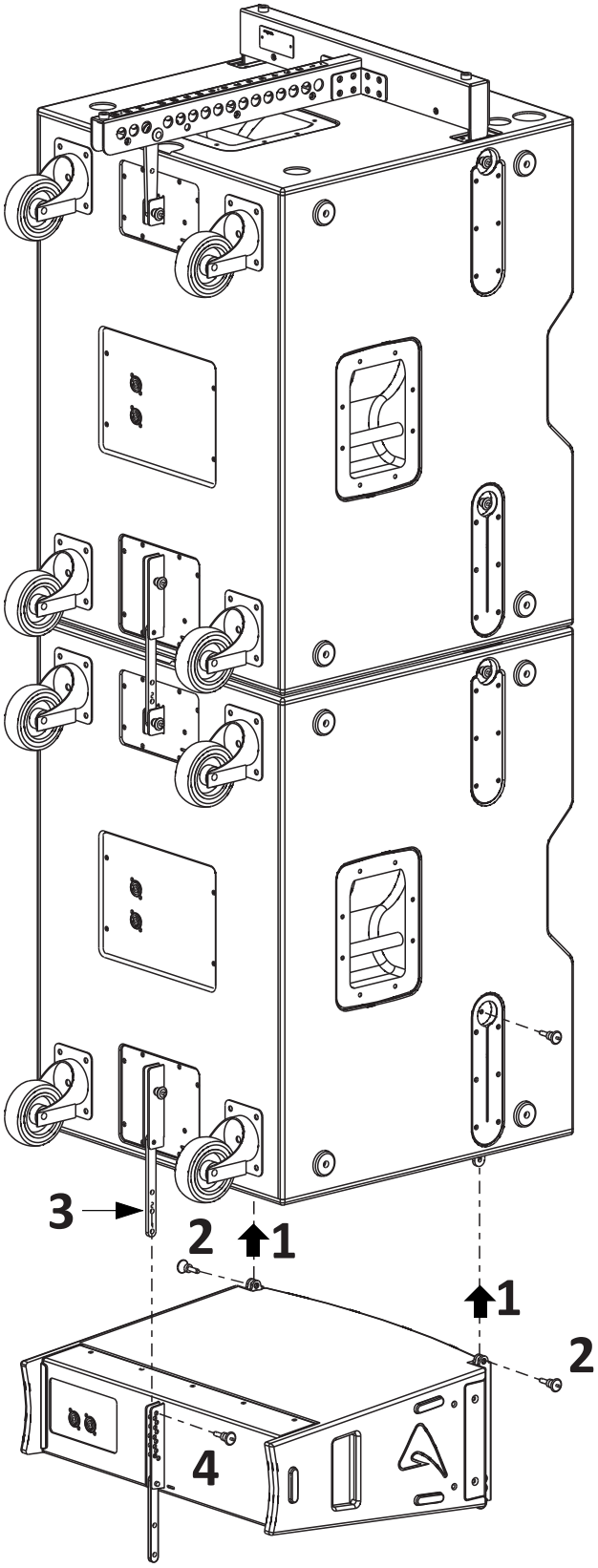
KPTSW215 - SW215FP ARRAY ASSEMBLING SEQUENCE



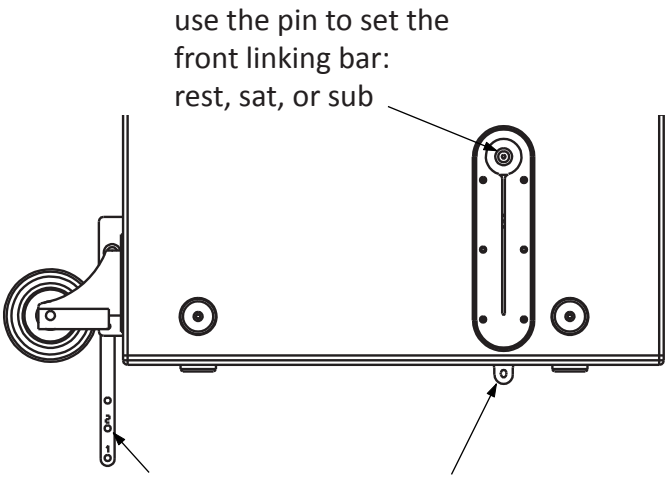
MAX:
KPTSW215
+
6x SW215FP



KPTSW215 - SW215FP - AX2065P ASSEMBLING SEQUENCE



MAX:
KPTSW215
+
2x SW215FP
+
8x AX2065P



LIMITED WARRANTY

Proel warrants all materials, workmanship and proper operation of this product for a period of two years from the original date of purchase. If any defects are found in the materials or workmanship or if the product fails to function properly during the applicable warranty period, the owner should inform about these defects the dealer or the distributor, providing receipt or invoice of date of purchase and defect detailed description. This warranty does not extend to damage resulting from improper installation, misuse, neglect or abuse. Proel S.p.A. will verify damage on returned units, and when the unit has been properly used and warranty is still valid, then the unit will be replaced or repaired. Proel S.p.A. is not responsible for any “direct damage” or “indirect damage” caused by product defectiveness.

• This unit package has been submitted to ISTA 1A integrity tests. We suggest you control the unit conditions immediately after unpacking it.
• If any damage is found, immediately advise the dealer. Keep all unit packaging parts to allow inspection.
• Proel is not responsible for any damage that occurs during shipment.
• Products are sold “delivered ex warehouse” and shipment is at charge and risk of the buyer.
• Possible damages to unit should be immediately notified to forwarder. Each complaint for package tampered with should be done within eight days from product receipt.

SAFETY INSTRUCTIONS

– To reduce the risk, close supervision is necessary when the product is used near children.
– Protect the apparatus from atmospheric agents and keep it away from water, rain and high humidity places.
– This product should be site away from heat sources such as radiators, lamps and any other device that generate heat.
– This product should be located so that its location or position does not interfere with its proper ventilation and heating dissipation.
– Care should be taken so that objects and liquids do not go inside the product.
– The product should be connected to a power supply mains line only of the type described on the operating instructions or as marked on the product. Connect the apparatus to a power supply using only power cord included making always sure it is in good conditions.
– WARNING: The mains plug is used as disconnect device, the disconnect device shall remain readily operable.
– Do not cancel the safety feature assured by means of a polarized line plug (one blade wider than the other) or with a earth connection.
– Make sure that power supply mains line has a proper earth connection.
– Power supply cord should be unplugged from the outlet during strong thunderstorm or when left unused for a long period of time.

CE CONFORMITY

Proel products comply with directive 2004/108/EC (EMC), as stated in EN 55103-1 and EN 55103-2 standards and with directive 2006/95/CE (LVD), as stated in EN 60065 standard.

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